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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/759,151      | 01/16/2001  | Yat-Tung Lam         | MP0071              | 2849             |

23624 7590 10/19/2004

MARVELL SEMICONDUCTOR, INC.  
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EXAMINER

KING, JUSTIN

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2111

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                            |  |
|------------------------------|-------------------------------|----------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>09/759,151 | Applicant(s)<br>LAM ET AL. |  |
|                              | Examiner<br>Justin I. King    | Art Unit<br>2111           |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-247 is/are pending in the application.
- 4a) Of the above claim(s) 12-14, 26-30, 42-45, 57-59, 71-75, 87-90, 102-105, 117-120, 132-134, 146-150, 162-211, and 223-247 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Continuation of Disposition of Claims: Claims rejected are 1-11,15-25,31-41,46-56,60-70,76-86,91-101,106-116,121-131,135-145,151-161 and 212-222.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 1-247 are pending. Examiner notes that Applicant elected the Group I invention claims 1-11, 15-25, 31-41, 46-56, 60-70, 76-86, 91-101, 106-116, 121-131, 135-145, 151-161, and 212-222 on 7/26/04 without traverse. Thus, claims 1-11, 15-25, 31-41, 46-56, 60-70, 76-86, 91-101, 106-116, 121-131, 135-145, 151-161, and 212-222 are considered herein. The non-elected claims 12-14, 26-30, 42-45, 57-59, 71-75, 87-90, 102-105, 117-120, 132-134, 146-150, 162-211, and 223-247 are withdrawn from consideration. Applicant is reminded to cancel the non-elected claims.

### ***Drawings***

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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***Specification***

3. The Specification should be updated to reflect the latest status of the listed related application 09/661912 on page 1.

***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-11, 15-25, 31-41, 46-56, 60-70, 76-86, 91-101, 106-116, 121-131, 135-145, 151-161, and 212-222 are rejected under the judicially created doctrine of

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obviousness-type double patenting as being unpatentable over at least claims 1-2 and 5 of the assignee's allowed patent application 09/661912. Although the conflicting claims are not identical, they are not patentably distinct from each other.

Referring to claims 1, 15, 31, 46, 60, 76, 91, 106, 121, 135, 151, and 212 : The current Application's claim 1's first limitation is the combination of the 912 Application's claim 1's first limitation and last limitation. The current Application's claims' second limitation is the 912 Application's claim 1's second limitation. The 912 Application's claims 1 and 2 only claim the control signal and the control information, the 912 Application does not explicitly claim that the control signal and information are for the split transaction as the current Application does. However, the split transaction is a commonly well-known practice in data transmission. Sharma (U.S. Patent No. 6,636,906) discloses the information indicating whether the transaction is a split transaction or non-split transaction (column 6, lines 35-37).

Referring to claims 2, 6, 16, 20, 32, 36, 47, 51, 61, 65, 77, 81, 92, 96, 107, 111, 122, 126, 136, 140, 152, 156, 213, and 217: Since the split transaction splits transaction into several sessions, the first session is the first split, the last session is the last split, and any sessions in between are the continue splits. Determining the continuation is an inherent characteristic of the split transaction to identify whether the current session is related to a previous session.

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Referring to claims 3-5, 17-19, 33-35, 48, 50, 62, 64, 78, 80, 93, 95, 108, 110, 123, 125, 137, 139, 153, 155, 214, and 216: To specify the amount of the data or codeword in each session is a common practice in constructing data packets. The 912 Application's claim 5 claims the information comprising a size indicating the size of the

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data. In addition, Dunn (U.S. Patent No. 5,274,772) discloses the counting field (figure 2, field 36) to track to amount of data in data transmission.

Referring to claims 7, 21, 37, 52, 66, 82, 97, 112, 127, 141, 157, and 218: The 912 claims do not explicitly claim the sync mark and padding data, but both are known practices in formatting data packets. Dunn discloses that the padding data is a known practice to align packet fields (column 4, lines 44-46), so each packet is in a unified format. Bliss (U.S. Patent No. 6,009,549) discloses the sync mark as a well-known practice for synchronizing data stream (figure 1B).

Referring to claims 8, 22, 38, 53, 67, 83, 98, 113, 128, 142, 158, and 219: The 921 Application does not explicitly claim a ready signal. Dunn discloses a status store for storing/monitoring status for the data processing operations (column 15, lines 40-46); thus, Dunn discloses the ready status/signal when the operation related contingences met.

Referring to claims 9, 23, 39, 54, 68, 84, 99, 114, 129, 143, 159, and 220: The 921 Application discloses the first hardware component is a disk controller and the second hardware component is an I/O channel (921 Application, figure 2).

Referring to claims 10, 24, 40, 55, 69, 85, 100, 115, 130, 144, 160, and 221: Bliss discloses a sync transceiver (figure 4, structure 44) for receiving sync mark.

Referring to claims 11, 25, 41, 56, 70, 86, 101, 116, 131, 145, 161, and 222: Bliss discloses a sync mark in front of the data field (figure 1B). Bliss teaches placing the sync mark at the front of a given field for indicating the beginning of the field.

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***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the serial data gate signal" in second limitation. There is insufficient antecedent basis for this limitation in the claim. Claims 2-11 are rejected because they incorporate the claim 1's limitations.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

- 
1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.



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10. Claims 1, 15, 31, 46, 60, 76, 91, 106, 121, 135, 151, 212, and 2, 6, 16, 20, 32, 36, 47, 51, 61, 65, 77, 81, 92, 96, 107, 111, 122, 126, 136, 140, 152, 156, 213, 217, and 9, 23, 39, 54, 68, 84, 99, 114, 129, 143, 159, 220 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of the admitted prior art and Sharma.

Referring to claims 1, 15, 31, 46, 60, 76, 91, 106, 121, 135, 151, and 212: The prior art discloses a serial control data circuit (figure 1, structure 12) and data circuit (figure 1, structure 14). The prior art does not explicitly disclose the control data signal including information regarding split or non-split. Sharma discloses that it is known to indicate whether the transaction is split or non-split (column 6, lines 35-37). Hence, it would have been obvious to one having ordinary skill in the computer art at the time Applicant made the invention to adapt the Sharma's teaching onto the prior art because Sharma teaches one how to accommodate devices with either split or non-split capability.

Referring to claims 2, 6, 16, 20, 32, 36, 47, 51, 61, 65, 77, 81, 92, 96, 107, 111, 122, 126, 136, 140, 152, 156, 213, and 217: Since the split transaction splits transaction into several sessions, the first session is the first split, the last session is the last split, and any sessions in between are the continue splits. Determining the continuation is an inherent characteristic of the split transaction to determine whether the current session is related to a previous session.

Referring to claims 9, 23, 39, 54, 68, 84, 99, 114, 129, 143, 159, and 220: The prior art discloses the first hardware component is a disk controller and the second hardware component is an I/O channel.

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11. Claims 3-5, 17-19, 33-35, 48, 50, 62, 64, 78, 80, 93, 95, 108, 110, 123, 125, 137, 139, 153, 155, 214, 216 and 8, 22, 38, 53, 67, 83, 98, 113, 128, 142, 158, 219 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of the admitted prior art and Dunn.

Referring to claims 3-5, 17-19, 33-35, 48, 50, 62, 64, 78, 80, 93, 95, 108, 110, 123, 125, 137, 139, 153, 155, 214, and 216: The prior art does not explicitly disclose specifying the amount of the data or codeword in each session is a common practice in constructing data packets. Dunn discloses the counting field (figure 2, field 36) to track to amount of data in data transmission. Hence, it would have been obvious to one having ordinary skill in the computer art at the time Applicant made the invention to adapt Dunn's teaching onto the prior art because Dunn enables one to improve the transmission efficiency by controlling the data amount in each session.

Referring to claims 8, 22, 38, 53, 67, 83, 98, 113, 128, 142, 158, and 219: The prior art does not explicitly claim a ready signal. Dunn discloses a status store for storing/monitoring status for the data processing operations (column 15, lines 40-46); thus, Dunn discloses the ready status/signal when the operation related contingency met.

12. Claims 7, 21, 37, 52, 66, 82, 97, 112, 127, 141, 157, 218 and 10, 24, 40, 55, 69, 85, 100, 115, 130, 144, 160, 221, and 11, 25, 41, 56, 70, 86, 101, 116, 131, 145, 161, 222 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of the admitted prior art, Dunn, and Bliss.

Referring to claims 7, 21, 37, 52, 66, 82, 97, 112, 127, 141, 157, and 218: The prior art does not explicitly disclose the padding data and sync mark. Dunn discloses that

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the padding data is a known practice to align packet fields (column 4, lines 44-46), so each packet is in a preset format. Bliss discloses the sync mark is a well-known practice for synchronizing data stream (figure 1B). Hence, it would have been obvious to one having ordinary skill in the computer art at the time Applicant made the invention to adapt the teachings of Dunn and Bliss onto the prior art because Dunn enables one to improve the transmission accuracy by controlling the packet format in each session and Bliss teaches one to synchronize the data stream with the sync mark.

Referring to claims 10, 24, 40, 55, 69, 85, 100, 115, 130, 144, 160, and 221: Bliss discloses a sync transceiver (figure 4, structure 44) for receiving sync mark.

Referring to claims 11, 25, 41, 56, 70, 86, 101, 116, 131, 145, 161, and 222: Bliss discloses a sync mark in front of the data (figure 1B). Bliss teaches placing the sync mark at the front of a given field for indicating the beginning of the field.

### ***Conclusion***

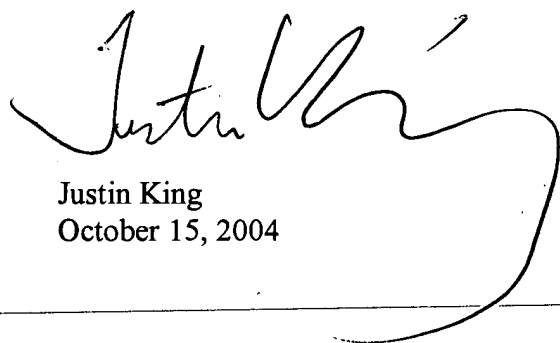
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin I. King whose telephone number is 703-305-4571. The examiner can normally be reached on Monday through Friday, 9:00 am to 5:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached on 703-308-3110. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

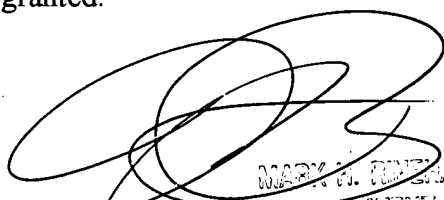
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information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lastly, paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions as of June 2004. Paper copies of foreign patents and non-patent literature will continue to be included with office actions. These cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this policy. Requests to restart a period for response due to a missing U.S. patent or patent application publications will not be granted.



Justin King  
October 15, 2004



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SUPERVISOR, PATENT EXAMINATION  
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